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ABSTRACT

Investigated was the effect of age, sex, experience, locus of control, self image, and grade level taught on the attitudes of 139 regular and special class teachers toward handicapped individuals. Ss completed the Attitude Toward Handicapped Individuals (ATHI) Scale, an abbreviated 11-item Rotter Internal-External Locus of Control Scale, and the Self-Esteem Scale. Twenty-two predictor variables were identified and regressed against scores from the ATHI. Results demonstrated that the variables were not individually in combination, or collectively predictive of the teachers' attitudes toward handicapped individuals. Findings were in general agreement with previous research in the field. (CL)

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PREDICTION OF TEACHER'S ATTITUDES TOWARD HANDICAPPED INDIVIDUALS

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The authors of major education studies have reported that teacher attitudes were an important contributor to teaching success and student progress (Blackwell, 1972; Chall, 1967; Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York, 1966; Rosenthal and Jacobsen, 1968). Coleman et al. in the Equality of Educational Opportunity suggested that the teacher, not curriculum or materials, was the critical variable for the delivery of services to students and students' success in school. Chall reported studies concerning learning to read. She concluded similarly to Coleman et al. that the teacher was the critical variable for students' achievements in reading. Blackwell examined teachers' attitudes using the Minnesota Teacher Attitude Inventory (MTAI) (Cook, Leeds, and Callis, 1951) and ratings of the teachers by their supervisors. He found a positive relationship between teachers' MTAI scores and ratings from supervisors. Blackwell suggested that as the attitude of teachers improved so did teaching effectiveness.

Authors who reported the above studies suggested that teacher attitude was important for effective teaching and student achievement, traditional teacher training has emphasized cognitive training with little, if any, direct affective training required to develop the teachers' interpersonal skills with children. Development of affective curricula for teachers appears to be lagging behind methods and materials in spite of its reported significance to student progress. Affective criteria for teachers have been left to incidental selection of students interested in teaching, teacher matriculation, and supervisory observation and ratings during the teacher service periods.

Studies reported by researchers who have examined teacher affect may be broadly classified in three categories. Researchers in the first category of studies have dealt with attempts to measure attitudes of teachers or groups of teachers against a criterion. These studies have commonly taken the form of measuring a person's attitude concerning a particular person, place, concept, or self. This category of affective study has lead to the development of scales and instruments for the measurement of attitudes.

Researchers in the second category of affect sudies have dealt with the ability to change attitudes. These studies required the measurement of attitude, as in category one above, and in addition required an intervention to change the attitude. Information gathered from these studies was useful for determining the effects of specific activities on teacher attitude (e.g., student teaching).

Researchers in neither of these categories of studies concerned with teacher affect have attempted to determine the attributes of attitude or specific individual variables that may be consistent with a given level of attitude. Researchers who have been concerned with the third category of attitude studies have attempted to select specific personality variables, personal history, and individual characteristics that allowed predictions to be made concerning teacher attitudes. Successful prediction has been based upon

accurate identification of the individual characteristics which have allowed investigators to pinpoint attributes to be treated with specific interventions for changing attitudes. Benefits from the accurate prediction of attitude would include improved teacher selection rational, effective affective curriculum development for teacher training programs, screening procedures for teacher training programs, and ultimately improved achievement for youngsters in grade schools.

Problem

Researchers have failed to identify attributes of teacher attitude in the area of affect. The thrust of affect research has been to change attitudes through specific interventions or to measure attitude against a criterion. Both of these areas of research have failed to contribute to the ability to predict attitudes or design interventions that change attitude with consistent results.

Achievement of consistent results in changing attitudes requires the delineation of attitude determinants. This research focused on the examination of personality variables, personal history, and individual characteristics in order to make predictive statements about an individual's attitude toward handicapped individuals.

Purpose

The purpose of this study was to examine the effect of a teacher's sex, age, amount of training, years of teaching experience, internal or external locus of control, positive or negative self-esteem and grade level of teaching as they contributed to the teacher's attitude toward handicapped individuals. These variables were analyzed to determine their relative importance for predicting the variance in the teacher's attitude toward handicapped individuals as measured by the Attitude Toward Handicapped Individual Scale (ATHI) (Lazar, 1973) and for making predictive statements concerned with teacher attitudes.

Selection of the particular variables was based upon related studies reported in professional literature. The literature has been inconclusive in determining the effect of these variables upon various teaching criteria. This research effort examined these variables against teachers' attitudes using statistical techniques. In essence, this study examined the effects of selected variables on a teacher's attitude toward handicapped individuals for the variable groups of age, sex, years of teaching experience, locus of control scores, grade level currently taught, self-esteem scores, and amount of training are individually, in combination, and/or collectively accountable for more than 50% of the variance in scores on a scale measuring attitude toward handicapped individuals.

Literature

The relevant research pertaining to the variables for this study vary widely in quality, design, and results. A concensus of the contribution for most of the variables is not possible at this time.

The effect of age of the subject on attitude has been reported to have a positive relationship to attitudes by several authors (Gottlieb, 1969; Gozali, 1971; Murray, 1969; Rochester, 1972; and Sigler and Noll, 1975) found age and positive attitudes toward the handicapped to increase until age 51 and then decline. Wilson and Alcorn (1969) found no significant changes of attitudes in relationship to the age of subjects.

For the preponderance of attitude studies, the results are females being more accepting than males (Blackwell, 1972; Lazar and Ernandez, 1973; Lazar and Orpet, 1972; Rapier, Adelsen, Carye, and Crooks, 1972; Sigler, 1975; Sigler and Noll, 1975; and Yuker, Block, and Young, 1966). Several studies report no difference in attitudes concerning handicapped persons by sex (Lazar, Stodden, and Sullivan, 1975; Sketic, Schmidt and Nelson, 1969; Sketic, Sigler, and Lazar, 1975; Wilson and Alcorn, 1969; and Yamamoto and Wiersma, 1967). It should be noted that subjects for the studies listed above having no differences by sex of subject were teachers or students practicing or studying in the helping professions and not a cross section of the general population.

Self-esteem and acceptance of handicapped individuals would appear intuitively related. Rosenberg (1965) stated, "Concern for other person's happiness and growth is a by-product of concern for the self" (p. 148). Empirical evidence, however, does not support Rosenberg. In studies by Stodden (1974), Yamamoto and Wiersma (1967), Sigler (1975), Billings (1963) these authors consistantly report no significant correlation between self-esteem and acceptance of handicapped individuals.

The construct of Locus of Control (Rotter, 1954), in spite of its' breadth of application, has not often been related to attitudes toward handicapped persons. Of five studies reviewed two (Mac Donald and Hall, 1969, 1971) were directly related to how subjects viewed handicapped individuals. Specifically, the studies were reported to conclude that internally oriented individuals viewed emotional disturbance more debilitating than externally controlled, while externally controlled subjects viewed physical disabilities more serious than had the internally oriented subjects. Ritchie and Phares (1969) report internally controlled subjects are influenced less by others than are externally controlled subjects. This author has not found studies more directly related to this study than those reported above.

The amount of training received by a teacher and the effect the training has on teacher affect has not been conclusively examined. Some investigators have found that amount of training did not result in greater acceptance of handicapped individuals (Blackwell, 1972; Galloway, 1973; and Sigler and Noll, 1975).

Investigators have had difficulty demonstrating that specialized training programs make a difference in affect (Green and Retish, 1973; Panda and Bartel, 1972). Cook, Leeds, and Callis (1951) report that length of training for teachers results in increase of attitudes toward teaching based on the Minnesota Teacher Attitude Inventory (MTAI). Specific training programs to change attitude have been effective such as demonstrated by Lazar, Gensby, and Orpet (1971).

The amount of experience in relation to attitude toward handicapped individuals has been examined by several authors with conflictive results. Several authors report positive correlations between length of experience and attitude (Blackwell, 1972; Galloway, 1973; Jordan and Proctor, 1969; Panda and Bartel, 1972; Schmidt and Nelson, 1969; Sigler and Noll, 1975). Cook et al. (1951) and Rabinowitz and Resenbaum (1960) report a significant decline in MTAI scores as length of experience increases. Conversely increased exposure to mentally retarded children has been reported by Jaffe (1966) to increase the favorableness of traits assigned to the mentally retarded. A relationship, conclusively demonstrated, between years of experience with handicapped children and one's attitude toward exceptional children would be useful for teacher selection and retention - however, no conclusive relationship has been demonstrated.

The author's consensus of studies on the relationship between grade level currently taught and one's attitude conclude that no positive relationship exists (Blackwell, 1972; Schmidt and Nelson, 1969; and Sigler and Noll, 1975). One study examined by this author conclude in a negative relationship (Alper and Retish, 1972). Grade levels taught may be too simplistic as a singular predictor. It's inclusion here is for combining it with other predictors for increased predictability.

Only three of the variables included in this study clearly have directional relationships with attitude (age, sex, locus of control). Amount of training, years of experience, and class level currently taught were not found to have directional relationships in previous studies.

Method

The Attitude Toward Handicapped Individual Scale (Lazar, 1973) purported to measure the level of one's acceptance of handicapped persons. Lazar adapted the ATHI from the Attitude Toward Disabled Person Scale by Yuker, Block, and Campbell (1960). The extent of the revision was to change the word "disabled" to "handicapped." Lazar's intent was to provide a shift in meaning from a possible limitation of function as connoted by "disabled" to an actual limitation of functioning as connoted by "handicapped."

The ATDP and the ATHI have been reported as having a correlation coefficient of r = .80 significant at the .01 level (Stodden, Graves, and Lazar, 1973). The reliability of the ATDP using the split-half technique ranges from .78 (N = 72) to .84 (N = 110) (Shaw and Wright, 1967). Shaw and Wright reported:

> The ATDP scale has reasonably good content validity and additional evidence is provided by the correlation of the ATDP scores with other scales. Significant correlations were found between the ATDP and semantic differential scales (-.266), scores of Job Satisfaction Scale (.463), and the Edwards Personal Profile Schedule (.252). . . the authors of this scale have done a considerable amount of work on it and the supporting data are better than for most scales . . . adequate for research (p. 481).

The Abbreviated 11-Item Rotter IE Scale

Eleven items were selected from the Rotter Internal-External Locus of Control Scale (Rotter, 1966) by Valecha (1972) to form the shorter 11 - item scale. Items were selected on the basis of being more general, adult oriented, and work related. The response pattern of the abbreviated version was changed from the original scale to allow for a measure of intensity of the response. For the abbreviated version the respondent was asked if the response is "much closer" or "slightly closer" to the respondent's own feelings and opinions.

No reliability data are presented for the abbreviated scale. The original Rotter scale was reported to have an internal consistency of .70 by Rotter (1966). Test-retest reliability coefficients of .72 were reported by Rotter (1966). Convergent validity of the Rotter scale was demonstrated in that over 50% of the locus of control studies have used the Rotter scale. Discriminant validity of the Rotter scale was reported as having correlations with the Marlow-Crowne Social Desirability Scale of between -.07 and -.35 which demonstrated the scale is not a measure of social desirability (Robinson and Shaver, 1973).

Self-Esteem Scale

The Self-Esteem Scale (Rosenberg, 1965) measured the self-acceptance aspect of self-esteem. The scale consisted of 10 items answered on a four point scale from strongly agree to strongly disagree. The scale was scored for either agreement or disagreement with the 10 statements.

The scale was designed for self-report and brevity of administrations. Robinson and Shaver (1973) reported reliability coefficients of .85 (N = 28) using the test-retest design with two weeks between tests. Validity for the scale was reported as:

convergent, .56 to .83; discriminant validity of .21 to .53 (Silberg and Tippett, 1965). Predictive validity was reported by Rosenberg (1965) as being commensurate with self-esteem scales in general. Robinson and Shaver (1973) reported:

> This scale is a model short measure aimed at one aspect of self-esteem, making it similar to a sub-scale from a longer form. In lieu of further empirical work those wishing a brief scale applicable to various ages could use a scale like this one or the appropriate sub-scale of a longer form (p. 82).

Collection of Data

For the purpose of this research a survey design was employed. A single county was utilized for sampling the teacher population. Each teacher who participated in the survey was asked to complete a self-report packet (see Appendix A) which provided information concerning individual characteristics, personality variables, and personal history.

The packets were distributed from the administrative county offices to the principals of the selected schools. The principals were responsible for distribution of the packets to the teachers, the collection of packets from the teachers, and the return of the packets to the administrative offices. A 75% return from the selected participating schools was considered necessary for adequate sampling.

For the collection of data in this survey self-administering type packets were prepared. Each packet contained:

1. a cover letter including the definition of handicapped and explaining the purpose of the survey.
2. an information sheet for gathering the name of the participating school, the amount of training the individual has received, the subject's age, years of teaching experience of the subject, and the type of class currently taught by the subject.
3. the Self-Esteem Scale.
4. the Attitude Toward Handicapped Individual Scale.
5. the Abbreviated 11-Item Rotter IE Scale.
6. a comment page so that the subject could react to the survey, if desired, and make comments on any misunderstandings or difficulties encountered while completing the survey. Information from the comment page was not intended to be included as part of this survey.

The order of presentation of the first and third scales within each packet was rotated so that one-half of the packets had the ATHI in first position and the other one-half had the SES in first position.

Subjects

Subjects were regular and special class teachers in one Florida county. All of the teachers in five schools (three elementary schools, one junior high school, one high school) were invited to participate. Of 180 teachers invited to participate 139 returned usable packets.

Treatment of Data

The data was statistically analyzed to test the null hypothesis with the multivariate techniques of Biomedical Program 02R (BMD 02R).

Each variable grouping was divided into sub-areas as follows:

1. Locus of control scores
   a. internal (upper 1/3 of scores)
   b. internal/external (middle 1/3 of scores)
   c. external (lower 1/3 of scores)

2. Self-esteem
   a. high (upper 1/3 of scores)
   b. middle (middle 1/3 of scores)
   c. low (lower 1/3 of scores)

3. Sex
   a. male
   b. female

4. Grade level currently taught
   a. elementary school
   b. secondary school

5. Amount of education
   a. Bachelor of Arts/Science
   b. Bachelor of Arts/Science plus 20 hours or more without Master of Arts/Science
   c. Master of Arts/Science
   d. Master of Arts/Science and above

6. Age
   a. under 25 years
   b. 25 to 35 years
   c. 35 to 50 years
   d. over 50 years

7. Years of experience
   a. less than 3 years
   b. 3 to 6 years
   c. 6 to 10 years
   d. over 10 years

Subjects were assigned to categories on the locus of control and self-esteem variables by using the lower, middle, and upper third of actual scores received on the scales. This procedure allowed for treatment of both the central tendancy by including the middle third or extremes by removing subjects in the middle third. Treatment of data for this survey included all subjects and subjects' scores.

The data were coded as if each sub-area of each variable group was a separate variable. Subjects were assigned membership to one sub-area of each variable group (e.g., a teacher with a Bachelor of Arts plus 20 hours credit was a member of the sub-area described by his amount of education and not a member of any of the other three sub-areas in that variable group). Kerlinger and Pedhazur (1973) have termed this procedure "dummy coding." The value of "dummy coding" was to discriminate between sub-areas within variable groups. This procedure also provided comparisons among variable group sub-areas.

Description of Sample Population

The characteristics of the sample population are summarized in Table 1 by each sub-area within each variable group. The sample population consisted of 139 teachers from five schools in Okaloosa County, Florida.

The sample population teaching in elementary schools was 34 teachers (24.4%). Those teachers teaching in secondary schools totaled 105 (75.6%). There were two elementary schools and three secondary schools included in the survey. The secondary schools had larger populations than did the elementary schools and, thereby, accounted for the larger secondary teacher sample.

The sample population by sex was 45 males (32.3%) and 94 females (67.7%). Most of the males were from secondary schools (93.3%). The secondary population of males versus females was more evenly distributed than the total survey population with 40.9% males.

The amount of training the teachers had received contained four sub-areas. Seventy-three teachers (52.5%) had a Bachelor of Arts/Science with less than 20 hours of postbaccalaureate study completed. Thirty-three teachers (23.7%) had completed a Bachelor of Arts/Science and more than 20 hours of postbaccalaureate study but had not completed the Master of Arts/Science Degree. Of the teachers in the sample 25 (17.9%) had completed a Master of Arts/Science but had less than 20 hours of postmaster study completed. Only eight teachers (5.8%) had completed both the Master of Arts/Science and 20 hours of postmaster study.

The variable group of age contained four sub-areas. There were 14 teachers (10.1%) in the first sub-area of being under 25 years of age, 72 teachers (51.8%) in the 25 to 35 years of age sub-area, 40 teachers (28.7%) in the 35 to 50 years of age sub-area, and 13 teachers (9.4%) in the over 50 years of age sub-area.

TABLE 1

Sample Population Descriptive Summary

Variable		N	%
Type of School:	Elementary	34	24.4
	Secondary	105	75.6
Sex of Subject:	Male	45	32.3
	Female	94	67.7
Amount of Training:	BA	73	52.5
	BA + 20 hrs.	33	23.7
	MA	25	17.9
	MA + 20 hrs. or more	8	5.9
Age:	Under 25 years	14	10.1
	25 to 35 years	72	51.8
	35 to 50 years	40	28.7
	Over 50 years	13	9.4
Experience:	Less than 3 years	24	17.2
	3 to 6 years	50	35.9
	6 to 10 years	30	21.6
	Over 10 years	35	25.1
Locus of Control:	Internal	45	32.3
	Internal/External	83	59.0
	External	12	8.7
Self-Esteem:	High	61	43.9
	Middle	49	35.2
	Low	29	20.0

The sub-areas including the youngest and oldest age groups accounted for only 19.5% of the sample population leaving the majority (80.5%) for the two central sub-areas including 25 to 50 years of age.

The experience variable group was divided into four sub-areas. Of the 139 teachers in the survey, 24 (17.2%) had fewer than three years experience, 50 (35.9%) had three to six years experience, 30 (21.6%) had six to 10 years experience, and 35 (25.1%) had more than 10 years of experience. The experience among sub-areas was reasonably well distributed. The smallest two sub-areas accounted for 38.8% of the sample population and the larger two sub-areas contained 61.0% of the sample population.

The locus of control variable group was divided into three sub-areas, one for each one-third of the score range. Of the 139 teachers 45 (32.3%) scored in the internal sub-area, 83 (59.0%) in the internal/external sub-area, and 12 (8.7%) in the external sub-area. The internal and internal/external sub-areas accounted for 91.3% of the sample population.

The self-esteem variable group was divided into three sub-areas. The high score sub-area contained 61 teachers (43.9%), the middle score sub-area 49 teachers (35.2%), and the low score sub-area 29 teachers (20.9%). The high, middle, and low sub-areas represent the upper, middle, and lower thirds of the teacher scores from the SES, respectively. The scores tended toward high self-esteem with 43.9% in that sub-area. Scores declined in percentage for the middle sub-area and further declined for the low sub-area.

Analysis

The 22 predictor variables in the study were regressed against scores from the ATHI. Results of the regression are shown in table 2. The single variable accounting for the largest amount of variance was teachers over 50 years of age with an F-ratio of 2.507 with 1 and 137 degrees of freedom. Significance at the $p = .05$ would require an F-ratio of 3.84 or greater. The RSQ, or contribution to predictive ability, was .0180 which has no practical application.

Variables considered in combination (see table 2) did not improve the F-ratio enough for a significant level ($p = .05$) to be obtained nor did combinations of variables increase RSQ to a level of practical application.

Collectively the 22 predictor variables were not significant for prediction of teachers' ATHI scores. After entry of the twelfth variable (Male) the remaining variables were not entered into the program because their F-ratios fell below the limits of the program. Further increases in RSQ by adding additional variables would not have brought about increased significance due to the dilution of the degrees of freedom.

TABLE 2

RSQ Improvement Summary

Step Number	Variable Entered	RSQ	Increase in RSQ	F Value
1	Over 50 Years Age	.0180	.0180	2.5065
2	Internal/External Locus of Control	.0322	.0142	1.9941
3	High Self-Esteem	.0460	.0139	1.9624
4	6 to 10 Years Experience	.0521	.0061	0.8639
5	25 to 35 Years Age	.0600	.0079	1.1179
6	BA + 20 Hours	.0638	.0038	0.5336
7	35 to 50 Years Age	.0661	.0023	0.3163
8	Low Self-Esteem	.0675	.0015	0.2051
9	Internal Locus of Control	.0684	.0009	0.1193
10	Less than 3 Years Experience	.0691	.0007	0.0933
11	MA + 20 Hours	.0696	.0005	0.0678
12	Male	.0697	.0001	0.0162

Discussion

The variables for this study were not individually, in combination, or collectively predictive of teachers' attitudes toward handicapped individuals. These results were not without support from literature cited in the review for this study.

The results as reported for this study are in general agreement with the leterature reported in the review. Two partial exceptions are in evidence. The literature reported for sex of subject is directional, in that when differences of attitude are present the more favorable attitudes are among the population of women. Secondly, age appears to have a significant positive relationship to attitudes as reported in the literature. Some of the differences between this study and those reported concerning sex and age may be the result of test design.

Unique Design Features

The design for this study is unique in the manner of coding the variables for inclusion in the regression program. The three studies (Blackwell, 1972; Sigler, 1975; and Sigler and Noll, 1975) cited in the review which use regression techniques entered variable group scores or membership criteria. That is, they entered, for example, the exact age of the individual and regressed the continuum of ages against the criteria scores. The procedure of "dummy coding" (Kerlinger and Pedhazur, 1973) allows membership to be assigned to sub-areas of variable groups. For example, age was split into four age groupings and each subject was a member of one group and not a member of the others. The procedure allows for comparisons between age sub-areas and age to attitude instead of only the latter. With the usual procedure used by the three studies cited above when a correlation is found postanalyses are necessary for determining the specific relationship of age to attitude. These postanalyses are either analyses of variance or intercorrelations. Analysis of variance only determines if a significant difference is present between variables and does not lend itself to predictive ability or practical application. Intercorrelations allow for prediction and practical application but do not allow for comparisons of sub-areas within other variable groups for maximum predictive combinations.

Sensitivity of Instrumentation

A possible explanation for the failure of attitude research to reach consensus may be due to the sensitivity of the attitude measurement instrument. To evaluate the sensitivity of the ATHI the sample population scoring with plus or minus on standard deviation of the mean was removed from the data and the same BMD 02R regression program was run. The results were similar to

the full data run in that no variable reached the level of significance. Implications from the result are two fold. Either there is, in fact, no difference between the extreme scores and the central scores on the ATHI for the variables used in this study or the instrument is not sensitive enough to measure the difference. With consideration to the literature concerning attitudes the first explanation seems reasonable.

Conclusions

The variables in this study were not predictive of teachers' attitudes toward handicapped individuals. This result is in agreement with the reported literature concerning attitudes and the variables used in this study. A possibility exists that the variables are truly not predictive of teachers' attitudes toward handicapped individuals. Another possibility is that ATHI is not sensitive enough to measure the attitudes for prediction from the variables included in this study.

Implications for Further Research

Further research concerning prediction of attitudes should utilize a variety of scales for the criteria variables. To obtain consistent results in attitude studies more information is needed on the sensitivity and relatedness of various scales used for criterion measures.

Researchers need to use the multivariate statistical approaches and avoid the more simplistic analysis of variance and t-tests common in affective measurement. Multi-variate statistical approaches provide rankings between variables in terms of their individual accountability for variance in the criterion rather than simply significant differences between and among mean scores.

Researchers should attempt to broaden the number and type of variables included in each study. To increase the number of variables with the use of multiple regression allows analysis of importance of one variable to another in making predictions about the criterion. More and varied types of variables should systematically be examined.

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